

TENDENCIES TOWARD RACE DEGENERACY



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A tendency toward race degeneracy implies a trend toward race extinction. The extinction of a race of animals, or even of a race of useful plants, is a sad event to contemplate; but the degeneracy and ultimate extinction of the human race is a catastrophe too appalling to consider calmly.

It will be impossible in the brief time allotted for this paper to discuss in all its bearings the question of race degeneracy. I shall undertake only to present a few statistical data and sundry observations which I trust may be deemed worthy of consideration. The facts and arguments adduced will be grouped about the following propositions:

1. Man belongs to the most highly organized class of mammals, a group of living forms which the history of animal life, as revealed by the study of the earth's crust, shows to be the most prone to degenerate and ultimately to become extinct as the result of changes in environment and departures from normal conditions of life. A large number of the highly organized animals which were coeval with primitive man have already disappeared. It is accepted as an established principle that the more highly organized an animal, the more susceptible it is to the destructive effects of changes in its environment. The oldest forms of animal life, if I am correctly informed, are those possessed of the simplest and least differentiated organisms. The oyster, for example, has a history extending back long ages beyond the first traces of man. The fact that man appears to be one of the most recent arrivals among the members of the animal world is, however, no guarantee of a long future, since the extraordinary development which elevates him so far above all other animal forms necessarily implies extraordinary susceptibility to destructive and degenerative influences.

2. While thus an easy prey to the causes which have produced degeneracy and finally extinction in other mammals living in essentially the same environment, civilized man has, in recent times, by the adoption of the conditions peculiar to civilized life, subjected himself to a number of subtle degenerative influences in addition to those which he has suffered in common with other races of mammals coeval with him, some of which have already perished.

3. There is at the present time a decided tendency toward physical decay and race degeneracy among civilized nations. Indeed, when we put together the two facts that man is perhaps the most susceptible to degeneracy of all mammals and that he is, at the same time, through the artificial conditions of life which civilization has forced upon him, the most exposed to degenerative influences, we could

expect nothing less than that the results of degeneracy would be apparent. For more than 50 years men whose studies or experiences have given them special opportunities for observation have been calling attention to the signs of degeneracy and the possibilities of the ultimate extinction of the human race unless effective preventive measures are adopted.

GALTON DECLARED THAT WE HAVE ALREADY NEARLY REACHED THE GRADE OF "TRAINED IDIOCY."

The great Galton, whose genius and generosity have in recent times created the new science of eugenics, says:

Our race is overweighted and likely to be drugged into degeneracy by demands that exceed its powers. With the deterioration of the condition of the masses, their organizations and functions, there will be plenty of idiots, but few great men; and hence, under the miserable conditions in which the masses of the people live, the general standard of man is but little above the grade of trained idiocy.

Such a statement as this, from a source less wise and less authoritative, might be regarded as sensational; but, as the sober conclusion of a well-trained and profoundly informed and well-balanced mind, it must be accorded weight.

IMPORTANT FINDINGS OF THE BRITISH INTERDEPARTMENTAL COMMITTEE ON RACE DETERIORATION.

A few years ago the English Government created a commission charged with the duty of investigating the question of race degeneracy in England. This committee, known as the interdepartmental committee on physical deterioration in Great Britain, made a very exhaustive study of the subject, taking the testimony of physicians, scientists, sociologists, magistrates, and people of all classes who had had opportunity for extensive and accurate observation, and published a voluminous report of their hearings. Many of the facts brought out in the several hearings were in the highest degree significant, as will be shown by a few representative extracts. On page 177 of the report we read:

In England degeneration is especially manifest in Manchester and other manufacturing districts. The police force is largely recruited from country districts, it not being possible to find enough men who are large enough in Manchester and Salford.

This is a most appalling statement. In a great section of England, comprising a population nearly equal to that of London, the people have become so deteriorated by the conditions of life to which they have been subjected that, in the words of the committee, it was not possible to find enough men who were large enough to serve as policemen.

A recruiting officer testified that 60 per cent of those who offered themselves as volunteers for military duty were rejected because of physical unfitness, and this notwithstanding the fact that the standard of requirements has been considerably lowered. For example, in 1845 (according to A. Watt Smith) the standard for admission to the army was 5 feet 6 inches. In 1883 it was lowered to 5 feet 3 inches. In 1900 it was lowered still further to 5 feet. In 1901 no fewer than 593.4 per mille were under the old standard height of 5 feet 6 inches,

and 511.8 were under the chest measurement of 34 inches, which was the minimum in 1883. Notwithstanding the lowering of the standard, amounting to 6 inches in height, the total rejections were not decreased and the decreases which were noted had relation to the measurements in which the standard had been lowered. (Physical Deterioration, Its Causes and the Cure, by A. Watt Smith.)

Statistics gathered by the British Association on the height of adult men between the periods of 1874-75 and 1889 to 1902 showed a decrease of 1 inch. A committee of the British Association for the Advancement of Science showed that the average height of boys between 11 and 12 years of age in the different schools was 55 inches; in industrial schools, same age, 50 inches. The difference in stature between adults of the same classes was 3½ inches.

Sir William Taylor, director general of the army medical service, makes the statement that "the rising generation of all below the artisan class includes a vast number of men of a very low standard of health and physique."

Mr. Gray, a member of the Anthropological Institute, noted a deterioration of physique in a portion of the population of Edinburgh and in the population of the west of Ireland.

Within recent times attention has been drawn to the great number of defectives among school children. For instance, a Scotch committee which made an extensive study of this subject found 70 per cent of the children in the public schools of Scotland more or less abnormal. The condition in this country is no better. The New York bureau of municipal research published the results of the examination of 1,500 school children in three city schools in which 93 per cent were found to be defective.

THE HUMAN RACE BECOMING TOOTHLESS.

We are rapidly becoming edentulous. The German authorities report that 90 per cent of the children of the public schools of that country have defective teeth. According to a recent report of a medical examination of the public schools of Cambridge, England, less than 1 per cent of the children 11 years of age or over had sound teeth. Indeed, disease of the teeth has become epidemic throughout the civilized world. This fact was made particularly clear by the investigations of the commission appointed by the British Parliament. Prof. Cunningham, the great English anatomist, testifying before this committee, said:

It is an obvious fact that the teeth of the people of the present time can not stand comparison in point of durability with those of the earlier inhabitants of Britain. Those who have the opportunity of examining ancient skulls can not fail to be struck with this.

An eminent English dental surgeon, W. H. Dolamore, L. R. C. P., M. R. C. S., L. D. S., testified:

If we go back to quite ancient times we find undoubtedly that the teeth were very much better than they are to-day. Thus, in ancient British skulls not only is the arrangement good, the jaws well developed, and the teeth placed in a normal arch, but caries, if present, is of slight extent, indeed mere specks.

Teeth taken from a plague pit (200 years old) were found to be—distinctly worse in arrangement and in extent of the caries than was the case in the ancient British skulls; but, on the other hand, they are better than what we look upon as the condition of to-day.

Dr. Young, member of the Royal College of Surgeons, testified before the English committee as follows:

With regard to the evidence of deterioration, we find there are rickets, malformed heads, muscular atrophy, malformed mouths, imperfect dentition, facial appearance of age instead of youth, a decrease in population.

AN ALARMING DECREASE OF THE BIRTH RATE IN CIVILIZED COUNTRIES.

A most positive evidence of deterioration is the diminishing birth rate. The birth rate in England fell from 35.3 per mille in the five-year period 1876-1880, to 26 per mille in 1906-1910. Each period of five years shows a material decrease from the preceding period. The registrar general of England says in his annual report for 1907:

The fact is also significant that at the last census period, 1900-1902, the fertility of English wives was lower than recorded in any European country except France.

The birth rate is decreasing not only in England and France, but in nearly all civilized countries, as shown by the following table, copied from an official source; the only exceptions being Spain, Austria, and Ireland:

Decrease of birth rate between 1880 and 1902—Countries showing a decreased fertility rate.

| | Per cent. |
|------------------------|-----------|
| New South Wales..... | 30.6 |
| South Australia..... | 28.0 |
| New Zealand..... | 24.5 |
| Victoria..... | 24.2 |
| Western Australia..... | 23.9 |
| Queensland..... | 23.2 |
| United States..... | 20.0 |
| Belgium..... | 19.8 |
| France..... | 19.7 |
| England and Wales..... | 17.7 |
| Scotland..... | 12.7 |
| Denmark..... | 9.8 |
| The Netherlands..... | 9.5 |
| German Empire..... | 8.4 |
| Sweden..... | 8.2 |
| Switzerland..... | 6.4 |
| Norway..... | 3.7 |
| Italy..... | 2.5 |

The rates shown in this table are calculated on the number of married women between the ages of 15 and 45 years. It is a matter worthy of note that the birth rate is diminishing more rapidly in the United States than in any other part of the world except Australia and New Zealand. The fertility of American wives is decreasing at the rate of 1 per cent a year. If the capacity for motherhood continues to diminish as rapidly as at present it is plain that in the year 2012 no children will be born, and in the year 2017 there will be no children under 5 years of age. Long before that time the death rate will far exceed the birth rate. Indeed, the process of depopulation has already begun in certain parts of the United States. A recent census report shows the average number of children borne by native-born New England wives to be 2.7 and by foreign-born wives living in the same section 4.4.

A member of the Royal College of Surgeons, who testified before the English committee, called special attention to the increase in barrenness of women as a sign of race deterioration.

AN INCREASING NUMBER OF INCOMPETENT MOTHERS.

Another evidence of degeneracy of a kindred sort is the increasing inability of women to nurse their children. According to the testimony of Dr. Jones, an eminent English physician, before the British Commission, only one in eight of the infants born in Sheffield is brought up at the breast. According to Dr. Kelly, bishop of Ross, Ireland, "the practice of suckling is fast dying out." According to Dr. Holt, "in New York at least three children out of every four born into the homes of the well-to-do classes must be fed at some other fount than the maternal breast." Within the last few years an enormous business in the manufacture of infant foods has been built up in this country because of the inability of American mothers to nurse their infants, a fact which is in itself a most striking evidence of the progress which race degeneracy is making in this country.

The number of incompetent mothers is increasing rapidly among civilized people everywhere. This fact has become so conspicuous that the eminent professor of entomology of the University of California has become convinced that the human race, like many other animals in which the social instinct is developed, is evolving a sort of neuter type corresponding to the worker class of bees and of some species of ants. The learned professor has discovered that women are in increasing proportions losing the instinct and the capacity for motherhood, and he predicts that a few generations will suffice to develop in the race a large class of women for whom marriage will be interdicted and who will be by society as well as by nature set apart as a working class. Whatever may be the value of this theory, the fact remains that the maternal fount is rapidly drying up, and the capacity for motherhood is depreciating at an extremely rapid rate. Race suicide or race degeneracy, of which ex-President Roosevelt has spoken so frequently and so emphatically, is an actuality and constitutes one of the unmistakable stigmata of racial degeneracy. There is no doubt that in certain parts of the United States decay of the native population through diminished fertility is already far advanced, though the actual condition is for the present somewhat obscured by immigration and the large families of the newcomers.

APPALLING INCREASE OF INSANITY, IDIOCY, AND IMBECILITY.

The increase of insanity and idiocy has become so marked in recent years that a note of alarm is frequently heard from alienists on both sides of the Atlantic. Dr. Forbes Winslow, one of the world's greatest authorities on mental diseases, recently stated in a public utterance published in the London Times, that in his opinion the entire race is destined to become insane. The superintendent of the Insane Asylum at Austin, Tex., in a recent report, called the attention of the people of that great State to the portentous fact that insanity is increasing so rapidly in Texas that, unless something is done to check it, it will not be many years before the insane will outnumber the sane, and, as the superintendent said to the writer, "will break out of the asylums and put us in."

And other parts of the United States are far in advance of Texas in mental decadence. For example, in 1867 the proportion of the insane in New York and in New England was about 1 to 1,600 of the

population. At the present time the proportion of insane in New York is 1 to 273 of the total population, or practically 6 times as many. In a pamphlet by Homer Folks and Everett Elwood, issued by the State Charities Aid Association of New York, it is stated that there are in the hospitals of New York alone 32,657 insane persons—more than double the number in 1890, an increase of 104 per cent in 20 years, while the population in the same State has increased only 52 per cent.

This number, great as it is, by no means represents the entire number of insane or of mental defectives in the State of New York, since the statistics of the hospitals show that about 25 per cent of all persons who are committed to the insane hospitals are discharged within a year as cured, at least temporarily, and 25 per cent more are discharged not cured but improved sufficiently to be thought not to require asylum restraint; from which it appears that there must be outside of the hospitals at least one-half as many more people who are either partially insane or who have once been insane. There is also a very considerable number of persons who are more or less disturbed mentally but who, because of the harmless character of their mental aberrations, are not thought to require asylum treatment.

Reports of the various insane hospitals of the United States show that we have an insane population of 150,000 who are under restraint, and unquestionably at least as many more who are at liberty.

Insanity is increasing even more rapidly in the British Isles than in this country. The English commission on race deterioration in its summary states:

There can, it is feared, be no question that insanity is on the increase in Ireland. (Par. 404, vol. 1.)

The number of insane in Ireland in 1902 is put down by the committee as 1 in every 170 of the population, while 50 years ago the number did not exceed 1 to 730, which means an increase of 300 per cent in 50 years. In this country the increase has been nearly as great, or about 300 per cent in the same time.

Beside this great army of lunatics, there is an equally large army of idiots and weak-minded persons, constituting a group of defectives which reaches not less than 300,000. Prof. Davenport, head of the department of eugenics of the Carnegie Institute, recently informed me that a study of defectives in the State of New Jersey shows that the feeble-minded class has doubled in that State in a single generation; that is, the proportion of this class to the whole population is twice as great as a generation ago. The proportion is now 1 to 250 of the total population. In Ireland, an older country, the proportion is 1 to 147. Evidently there are lower levels of mental degeneracy which we have not yet reached, and toward which we are hastening. We now have 1 mental defective (insane or feeble minded) in every 300 of our population, and Ireland has 7,000 to the million. At the present rate of deterioration we shall be in the sad position of Ireland long before the middle of the century, and Ireland will have a lunatic or a feeble-minded person in every fourteenth family. These terrible facts demand attention. We are creating a lunatic and idiot population which threatens to become a majority within a few short centuries.

The tract sent out by the State Charities Aid Association, from which I have already quoted, calls attention to the fact that nearly 13 per cent of the total number of insane are paretic, and that these probably owe their condition to syphilis, the social ulcer which every year is eating deeper into the constitution of every civilized race.

That insanity is a disease of civilization is shown by the extreme rarity with which this condition has been observed among the North American Indians, and the fact that while in England there are found 6 recognized insane persons to every 1,000, among the less civilized of the Slavonic races the proportion is only one-tenth as great, or 0.6 per 1,000.

RAPID SPREAD OF THE CANCER PLAGUE.

Another degenerative malady characteristic of civilization is cancer. Williams has shown that this disease is practically unknown among the wild races of men and of animals; that it is most common in the most highly civilized communities and among domestic animals. Cancer at the present time kills 1 in 20 of all the people dying in the United States. Its prevalence has increased 500 per cent in 60 years. The disease is advancing more rapidly in the cities than in the country, a statement which applies to chronic diseases in general. In many cities the mortality rate for cancer is more than double, the average reaching nearly 2,000 to the million annually. Cancer is a chronic disease, and the death of 75,000 from this disease in the United States annually in spite of the best efforts of modern surgery means that not less than 300,000 are suffering constantly from this most loathsome malady. At the present rate of increase by the middle of the century at least 1 in 40 of the entire population will be suffering from this disease, and 25 per cent of the mortality will be due to it.

Of the women who died in 1909 between the ages of 45 and 55 years, 1 in 7 died of cancer. The disease is increasing rapidly among women, but still more rapidly among men. Thirty years ago this malady carried off twice as many women as men. At the present time the mortality among men is three-fourths as great as that among women.

The statistics of the London and Berlin hospitals for sick animals show that 8 per cent of the sick dogs are found to be suffering from cancer, and 7 per cent of the cats. Among nonflesh-eating animals—horses, cattle, sheep—the proportion is very greatly less. The records of the London hospitals show 12 per cent of the sick received into their wards to be suffering from cancer.

It has recently been discovered that cancer is epidemic among the fish of several of the fish hatcheries of the United States Fish Commission, and every fish hatchery in the United States is more or less infected with cancer. The form of cancer in fishes is identical with the true cancer of human beings.

Ross, of Liverpool, has recently shown that cholin and other poisons resulting from the disintegration of animal flesh produce abnormal cell growth, and are the probable cause of cancer. [Since writing the above the writer has had an opportunity to visit the laboratory of the Lister Research Institute in London, where Dr. Ross is now at work, and witness a most satisfactory demonstration

of the remarkable discoveries of this investigator, which are now recognized by Prof. Osler, of Oxford, and many other eminent authorities. Dr. Ross has largely proved the truth of his contention by producing cancer in guinea pigs.]

INCREASE OF EYE AND EAR DEFECTS.

Eye and ear defects are decidedly on the increase. Dr. Alexander Graham Bell pointed out long ago the fact that the asylum treatment of deaf mutes and the very natural intermarriage resulting was creating a deaf-mute variety of human beings.

The increase of eye disease is so rapid that the time seems not far distant when the use of glasses will be almost universal. Twenty per cent of the children in the public schools of England have defective eyes. Among the volunteers for the Boer War the number of persons with eye defects was found so great that it became necessary to accept many of them as soldiers, contrary to all previous practice, and to fit them out with glasses in order to keep the ranks of the army filled.

THE MORTALITY RATE FROM CHRONIC DISEASE HAS DOUBLED IN 30 YEARS.

Chronic disease and degenerations of all sorts are increasing, and at a very rapid rate in recent times. Careful study of the mortality reports of the United States Census Bureau makes this fact very clear. These reports show, for example, that the mortality from arteriosclerosis, a disease of the blood vessels, has increased from 6.1 per 100,000 in 1900 to nearly 21 per 100,000 in 1909, an increase of 241 per cent; that is, more than three times as many people die from disease of the blood vessels to-day as 10 years ago.

The mortality rate from diabetes, in spite of all the discoveries in metabolism and improvements in dietetics, has increased nearly 50 per cent in 10 years; and the mortality from appendicitis, notwithstanding the best efforts of able surgeons, has increased more than 20 per cent in the same time.

During the same time the mortality from heart disease has increased over 50 per cent. Mr. Rittenhouse, late president of the Provident Savings Life Assurance Society of New York, has recently called attention to the fact that there has been an increase in 30 years in the mortality from Bright's disease in the United States of 167 per cent. Mr. Rittenhouse goes on to show that the mortality from chronic disease in general has doubled in less than 30 years and that the total mortality between 40 and 50 years has increased 34 per cent, between 50 and 60 years 22 per cent, and between 60 and 70 years 25 per cent. The expectancy of life after 40 years has thus notably decreased because chronic disease finds most of its victims among persons past middle age.

Chronic disease kills half the people who die in the United States, or about 750,000 persons annually. Half of these, that is 375,000, would not die if the average health were as good as 30 years ago. This enormous increase in the mortality rate from chronic disease has escaped the attention of sanitarians because of the notable decrease in the general death rate, as the result of a decrease in deaths from

acute disease so great as to more than equal the increase in deaths from chronic disease.

This great improvement in the general death rate has increased the average length of life more than 15 years in a century, and this fact has been accepted as satisfactory evidence that we are making rapid progress in race improvement. This is a grave error. It is important to recognize the radical difference between acute and chronic disease. The poet Watts sang:

Diseases are Thy servants, Lord;
They come at Thy command.

This hymn is found in all the old hymn books. It represents the old philosophy of disease, which led a certain pope in the Middle Ages to anathematize the Turk, the pestilence, and the comet. Modern enlightenment has shown us that disease is an evil of human production. Acute diseases we take from our neighbors; chronic diseases are a home product, the result of erroneous habits, often poison habits acting through long years and producing a gradual degeneracy of the tissues.

NOTABLE INCREASE OF CRIME.

When we turn from the contemplation of physical disorders to the consideration of moral maladies, the picture is darker still. Crime is increasing at a rapid rate. There are 10,000 murders, and 16,000 suicides every year—one murder in every 9,000 of the population annually, and one suicide in every 5,800. The proportion of murders to the whole population is reported to be twice as great in this country as in India, a country which we are trying to help civilize and Christianize.

Within 23 years the number of suicides in Great Britain has doubled. This crime is increasing in the United States at about the same rate.

In France, according to the *Revue de Paris*, crime is increasing rapidly, especially juvenile crime. There are 400,000 highway robberies in France annually. A criminal type of men and women is developing, and has already reached large proportions in all civilized countries. A bulletin recently sent out by the eugenics record office of the Carnegie Institution tells of a family with 319 members, only 42 of whom were normal; and the proportion, we are informed, has since been found to be 600, with only 50 normal.

CENTENARIANS RAPIDLY DECREASING IN NUMBER.

Another evidence of the pernicious influence of the one-sided hygiene which simply preserves the unfit, while doing nothing to cure their unfitness, appears in the marked depreciation in the proportion of centenarians to the whole population which is going on in all civilized countries. The real measure of the physical vigor of a race is not the age at which the average man dies, but the proportion of individuals who attain great age. Cholera, yellow fever epidemics, and other plagues, in former times weeded out the weaklings, drunkards, debauchees, and other classes of the unfit. By keeping these alive through quarantine and public sanitation, the average longevity is increased, although both the actual number as well as the proportion

of centenarians has steadily diminished. We have been making ourselves believe that the tree was flourishing because of the great number of young sprouts about the bottom, while the main trunk is dying at the top.

Statistics of all highly civilized countries show a steady falling off in the number of centenarians. We have in this country at the present time less than 4,000 centenarians, or one in 25,000 of our hundred million. Bulgaria has 3,000 centenarians in a population of 3,000,000, or one in every 1,000—25 times as many in proportion. Older civilizations are worse off than we are. In France the proportion of centenarians is 1 in 190,000 of the population; in England, 1 in 200,000; and in Germany, 1 in 700,000. In these countries decay has extended so far down the trunk that it has nearly reached the level of the young shoots.

Senility and youth are approaching each other, and the time seems not far distant when the normal interval between youth and second childhood will disappear, and childhood will be met by second childhood. A Philadelphia doctor reported a youth of 28 years whose arteries were as hard as pipe stems, and a German authority reported a similar case in which the patient's age was 17 years. Men and women of 40 years, who present all the evidences of advanced senility, are rapidly increasing in number. The responsible cause is the same as that which produces the increasing mortality from Bright's disease, heart disease, and pneumonia. Degenerated kidneys, hardened arteries, fatty heart, are simply old kidneys and arteries and sterile heart.

ANATOMICAL EVIDENCES OF DEGENERACY IN MAN.

Prof. Wiedersheim, of Freiburg, one of the world's greatest authorities in comparative anatomy, in his work, *The Structure of Man*, points out nearly 150 different organs of the human body which are in a state of degenerative change. Some of these are so far atrophied that their functions are altogether lost, and even their vestigial remains are often lacking. A few conspicuous examples of these anatomical degenerative changes may be cited by way of illustration.

Wiedersheim points out the fact that the chest of civilized man is decreasing in size. The sternum and the upper rib are atrophying. The thirteenth rib, which man originally had, as have the gorilla and the chimpanzee, appears only occasionally. The eighth sternal rib is gone, and the seventh is atrophying. The eleventh and twelfth ribs have nearly disappeared. Contrasted with the chest of a savage or a gorilla, the chest of a civilized man is almost insignificant.

Wiedersheim aptly raises the question whether this reduction in the size of the chest may not be connected with the degeneration of the lungs (tuberculosis) so frequently observed in civilized man.

The feet are degenerating notably. The muscle which renders possible opposition of the great toe, that is its use as a thumb, appears in the human embryo, but is not present in the adult. The corresponding muscle of the little toe is nearly lost. The little toes have but two joints instead of three in one person out of three, and often a joint is lacking in the third or fourth toe. In the Japanese the degeneration of the feet is far less marked than in Europeans. Bälz, who made a careful study of the Japanese, says:

The use made by the Japanese of the great toe as a kind of thumb is very remarkable; it can be independently moved. * * * A woman when sewing may hold the stuff with her toes, stretching it as she pleases; and it is asserted that Japanese women can pinch effectively with their toes. * * * These people seem to be able to hold on to the ground with the sole of the foot. * * * In fighting they are always bare-footed. The first time one sees a Japanese man walking about with ease on a steep housetop as if on level ground, it makes one feel quite uncomfortable, but no fear of his falling need be entertained, for his foot accurately adapts itself to the surface of the roof.

The abdominal muscles are greatly diminished in size, especially the rectus, which formerly extended to the top of the chest, and now sometimes reaches the second rib. The palmaris, or fingers flexor, is nearly lost, as well as the plantaris of the leg.

The outer ear has become diminutive, and the muscles which formerly moved it are now mere vestiges.

The olfactory ridges of the nose are diminished to two or three in place of twice as many, and the olfactory tract in the brain is likewise degenerating.

But, most evident of all, and perhaps most serious, is the degeneration of the teeth. Wiedersheim points out that the teeth are degenerating both in size and in number. He also shows that the lower jaw and the muscles which move it are becoming smaller. The outer incisors of the upper jaw are often lacking, or reduced to mere stumps, and the third molar or wisdom tooth of both jaws is disappearing. The jaw is shortening, so that there is not room for the third molar. This degeneration is most marked in the second or permanent teeth. Wiedersheim attributes this degeneration of the teeth to the change in man's diet from the natural nonflesh diet of primitive man to the unnatural diet of the present day.

NEW AND ABNORMAL VARIETIES OF THE HUMAN RACE.

Evidently we are developing a number of defective varieties of the genus homo. We are losing our teeth. The jaw, not properly used in mastication, is becoming so short that there is no room for the last molar. The wisdom tooth comes in late, and, after making no end of trouble for two or three years, dies prematurely through lack of a proper blood supply. I possess the skull of a mound builder taken from a mound on Roberts Island in San Francisco Bay, evidently that of an old man, yet each jaw contains 16 well-worn teeth, not one of which shows the slightest evidence of decay.

We are losing our sense of smell, the result of disuse and of almost universal disease of the nose from low vital resistance and infection. And we have no compensation for the loss of this most important sense.

Then we have the myopic man, and the hypermetropic man, the astigmatic man, who can not see straight, and the insane type of man, who thinks astigmatically; the epileptic type, the criminal type, the consumptive type, the neurotic type, the inebriate type, the senile man, the weak-footed man, the feeble-minded man, the dyspeptic type, the neuter type of woman. All these, and numerous other pathological varieties of human beings are, through the inexorable law of heredity, multiplying and intermingling, thus intensifying old defects and creating new ones and leading on down the hill of race degeneracy.

SOME OF THE CAUSES OF RACE DEGENERACY.

There is evidently something the matter. It is the duty of sociologists and sanitarians to find out the causes and the remedy. Some 30 years ago my duties as a member of the Michigan State Board of Health led me to make a somewhat careful study of public-health laws and administration, as a result of which I reached the conclusion that public health regulations of all sorts were detrimental and dangerous to the welfare of the race unless supplemented by more thoroughgoing measures which would reach the personal life of the individual. It seemed to me obvious that public-health regulations and quarantine restrictions would serve to keep alive a large number of weakly infants and feeble adults whose infirmities and deficiencies through the operation of heredity would affect and weaken the race. The eminent Prof. Cunningham, in his testimony before the English committee on race deterioration, referring to the lowering of the death rate through improved hygienic measures and the preservation of the weak and unfit, remarks:

There can be little doubt that the addition of these to the population must have tended to lower the general physical average of the people of these countries.

Public sanitation preserves the unfit instead of securing the survival of the fittest, and the unfit contaminate the fit. This explains the fact, to which Mr. Rittenhouse had called attention, that notwithstanding the increase in the average longevity within the last century, the mortality after 40 years has notably increased.

W. H. Dolamore, L. R. C. P., M. R. C. S., L. D. S., in testifying before the British commission, attributed the great prevalence of decay of the teeth in young children to the preservation alive of a great number of feeble infants in recent times. He remarked:

If you take a primitive condition of society, it is perfectly obvious that most sickly children would die off. For example, take as an extreme instance the children that Darwin met with while in Patagonia, where he noted that the newly born child was carried about naked by its mother, and the rain froze on it as it fell. It is perfectly obvious that every sickly child would be killed off and therefore only those that were vigorous would survive.

Here, then, is a fundamental cause in operation in every civilized community which must tend to race deterioration and possibly ultimate extinction, unless counteracted by attention to the personal habits of each individual so that the unfit who are preserved alive may so far as possible be made fit, and general race deterioration be thus prevented.

The preservation of the unfit, while humane and altruistic, is nevertheless a menace to the race and lends a helping hand toward ultimate race destruction, unless we do something more. If we are to save alive the unfit, we must heal them of their unfitness and prevent the multiplication of their defects by recognizing the laws of eugenics; otherwise our altruism to the individual becomes homicide to the race.

THE DEGENERATIVE INFLUENCE OF SOME COMMON HABITS.

A brief glance at some of the conditions universally prevalent among civilized people shows how wide a departure has been made from normal conditions of life. The first men were born out of doors. Native to a tropical climate, primitive man required neither house nor

clothing, but climatic changes compelled him to seek shelter in caves, and he has been a cave dweller ever since. Tuberculosis is a house disease. Monkeys, antelope of all sorts, even lions and other carnivorous animals, die of tuberculosis when shut away from the fresh air and the sunshine. Dr. Evans, health officer of the city of Chicago, turned the consumptive monkeys of the city zoological collection out of doors in dead of winter, and they got well. Tuberculosis is unknown among animals that live in the open air. The tuberculous type of man will continue to multiply until we learn to cultivate the out-of-door life and to sleep in an out-of-door atmosphere. Colds, catarrhs, pneumonia, general low resistance, the mother of all maladies, are the natural outcome of our adherence to the example of our cave-dwelling ancestors.

The artificial habit of wearing clothes enfeebles the skin by overheating, retains the poisonous excretions to be resorbed, polluting the blood and giving rise to various skin maladies. Absence of the vitalizing rays of the sun playing upon the skin and of the tonic influence of contact with the moving air, the wearing of shoes, hats, restricting bands, and other garments are all prolific sources of debility, systemic weakness, and lowered resistance, which open the door to numerous grave and vital maladies and general race decay. We can not dispense with clothes, but we must counteract the evil effects of clothing by frequent cleansing baths, daily cold-water or air baths, swimming, work in the gymnasium, wearing of light and porous clothing, and frequent change of underwear.

Women are degenerating more rapidly than men, for the reason that they are more indoors; their clothing is more restrictive; their habits more sedentary. The average savage woman is nearly as strong as the savage man. The civilized woman has but half the strength of the civilized man.

This fact has been positively shown by the comparative tables of muscular tests made with the universal dynamometer, an instrument used by the United States Government in the examination and training of men for the Army and Navy. Averages of many hundreds of cases were made and the data compiled with care.

The bad conditions of school life kill nearly 90,000 children in the United States every year. The out-of-door school, cold-air school-rooms, school gymnastics at the end of every period, medical school inspection, and the daily and hourly inculcation by teachers of respect for the body and the principles of healthful living are necessary reforms.

A swimming pool, ample playgrounds, and an open-air gymnasium should be connected with every public-school system.

The basis of education must be changed. The development of a sound body must be the first desideratum, rather than the training of the brain in mental gymnastics while the body is left to fall into decay.

Diet is a factor of primary importance in the biological development of the race as well as of the individual. Each race of animals selects by instinct the food best adapted to it. The human race, at least the civilized portion of it, seems to have lost its guiding instinct, and has wandered far in its dietetic practices from the normal and physiological way of life. Man has unwisely added to his natural diet the bills of

fare of nearly all other creatures, besides many things not foods, as condiments, and with most disastrous results.

The chimpanzee still adheres to the original bill of fare which nature provided for primitive man and his relatives. The big apes of the London zoo are wholly content with a diet consisting of lettuce, oranges, bananas, rice, potatoes, and bread, with now and then a coconut or a handful of monkey nuts.

Man discovered fire, which has enabled him through cookery to feed upon roots, dry grains, and the flesh of animals. Cookery has rendered the race invaluable service, but has unquestionably been the means of leading us too far away from our primitive dietary. The great hopes raised by the application of Pasteur's discovery to the destruction of the germs in milk were only in part realized, for it was soon discovered that infants fed on cooked or sterilized milk became rickety and had symptoms resembling those of scurvy. It has been definitely shown that the cooking process breaks up and destroys many delicate compounds and enzymes which are essential to complete nutrition. No farmer would think of feeding his horses, pigs, or cattle on an exclusive cooked diet. Something uncooked should be eaten daily to preserve the integrity of the body. A western pioneer told the writer that when shut in for three weeks in the Sierras he escaped the scurvy, from which all his comrades suffered, by following the example of the mules, which dug away the snow and ate the grass underneath.

Dr. Lauder Brunton tells us that one reason why we lose our teeth is because we do not get lime enough in our food. Bunge, of Basel, and Sherman, of Columbia, have pointed out that half the people of the United States are suffering from lime starvation through the use of foodstuffs which contain little or no lime. The body loses daily 17 grains of lime in the excreta. This must be replaced. If it is not replaced by the food, the bone, and teeth are robbed of lime and thus softened. The lime content of foods varies greatly. A pound of wheat or of Graham flour contains 4 grains of lime; a pound of bran 24 grains; a pound of fine flour but 1 grain; a pound of meat only half a grain; a pound of potatoes less than 2 grains; a pound of sugar none at all. A pint of milk contains 14 grains of lime; a pint of cream three-fourths as much; a pound of butter almost none at all. Peas and beans contain 8 grains of lime to the pound.

It is thus evident that sugar, though a carbohydrate, is not a proper substitute for the carbohydrate of cereals, and lean meat, though rich in protein, is not a proper substitute for the protein of vegetables, because in both instances the lime which is by nature associated with the carbohydrates and proteins in the necessary proportion has been separated, in one case by the artificial process of milling and in the other by the natural process of assimilation. The corn which the hog eats contains an abundance of lime, but, when assimilated, the lime is separated, going to the bones, while each other food principle goes to its proper tissues—the protein to the muscles, the starch and oil to the fats. When the hog is eaten, the bones are left behind and the lime with them. The bones must be eaten with the flesh to get the lime which is necessary to render it a complete food.

The annual average per capita consumption of meat in the United States, including fish and fowl, is 240 pounds, or two-thirds of a pound a day for each man, woman, and child. The per capita consumption

of sugar is over 82 pounds, or about 4 ounces a day. With the addition of butter and other fats, these items furnish three-fourths of the nourishment of the average citizen of the United States and supply practically no lime. Here is abundant reason for decay of the teeth, and the consequent depreciation of stature seen especially in England.

The marked change in diet which has occurred in the last half century may be in large part responsible for the great increase in chronic disorders, which has added 350,000 to the annual death roll within 30 years. The mistake of the earlier students of human nutrition in placing the protein ration at a figure at least twice the real requirement encouraged a mischievous increase in the use of flesh foods, the disadvantages of which have been demonstrated by Prof. Chittenden, of Yale, by Dr. Hindhede, in Denmark, and by numerous physiologists in various countries. The unusable surplus of protein resulting from the free use of meat and eggs is converted into poisons, producing a condition commonly known as autointoxication since the discoveries of Bouchard, and now recognized as the real cause of most chronic diseases and degenerations, many of which were formerly attributed to vague and mysterious causes.

The ordinary dietary, consisting largely of meats, which are always in a more or less pronounced state of decay, promotes intestinal putrefactions which Metchnikoff, Boix, and others have shown to be the cause of hardening of the blood vessels and many other degenerations. The high protein dietary, in the writer's opinion, has played a very large part in producing modern race degeneracy.

Of all animals man is the only one that spoils his food before he eats it. Every other creature takes it from the beneficent hand of nature as it has been provided for him. Man not only burdens his one simple, rather feeble stomach with the bills of fare of all creation, but deliberately, under the guise of cookery, damages wholesome food-stuffs by various pernicious processes which render it indigestible, and by the addition of poisonous substances called condiments. Recent researches have shown that extracts of mustard, pepper, and other irritating condiments, when injected in small quantities into the blood vessels of animals, in a few months produce atheroma of the arteries and other changes characteristic of senility. Boix, of Paris, has shown that pepper and other substances are even more active than alcohol in producing cirrhosis of the liver and other visceral degenerations.

Pawlow's discoveries have made clear the enormous mischief which is daily done to the digestive organs by the use of baking powders and alkalies in other forms.

Overeating is probably doing more harm than underfeeding among civilized people. Bright's disease, cancer, and decay of the teeth are found to be more common among the well to do than the poor. Cancer in particular is a rich man's disorder—the result of high protein feeding and sedentary habits.

THE PER CAPITA POISON DOSE.

Poison habits are increasing, both in the number of enthralling drugs and the proportion of victims. Alcohol, tobacco, tea, coffee, cocoa, cocaine, and opium are yearly destroying new armies of victims,

and through heredity sending their baneful results down to posterity. According to data furnished me by the Census Bureau, the people of the United States consume every year 1,935,000,000 gallons of alcoholic liquors, 400,000,000 pounds of smoking and chewing tobacco and snuff, 7,500,000,000 cigars, 5,500,000,000 cigarettes, 111,000,000 pounds of cocoa and chocolate, 1,000,000,000 pounds of coffee, 100,000,000 pounds of tea, 400,000 pounds of opium, and 30,000 ounces of that most subtle of all enslaving drugs—cocaine.

The per capita consumption of these various poisons figures out as follows: Alcoholic liquors, 176 pints, or half a pint a day for each man, woman, and child; tobacco, according to the Tobacco Journal, 10 pounds for each man, woman, and child living in the United States; tea, coffee, cocoa, and chocolate, 15 pounds; opium, 30 grains.

Essential poisons are contained in these several drugs in quantities taken annually per capita as follows: Pure alcohol, 120,000 grains; nicotine, 2,100 grains; caffeine, 2,100; opium, 30 grains; equivalent to the following daily doses of poisons: Three hundred and fifty-six grains of alcohol, enough to kill a child if taken in concentrated form and at one dose; 6 grains of caffeine, a poisonous dose for a cat, and a large medicinal dose for a man; 6 grains of nicotine, enough to kill 50 cats, or 6 men not accustomed to the use of tobacco; and one-twelfth grain of opium; aggregating 368 grains of poison.

With this amount of deadly poisons circulating daily and nightly in the veins of the average American, it is no wonder that signs of degeneracy are making their appearance. And to the above list of poisons must be added a vast amount of miscellaneous poisons swallowed under the guise of patent and proprietary drugs, especially certain coal-tar products, the tendency of which to produce degenerative changes is well known, and even a new class of soda fountain drinks to which Dr. Wiley and the United States Agricultural Department have recently called attention, containing caffeine and other drugs.

The recent studies of Andriesson, Tuke, Hodge, and others have shown how these drugs destroy a man soul and body, by producing degeneration of the delicate fibers by means of which nerve cells communicate with one another, thus isolating the individual units of the cerebrum and so destroying memory, coordination, will, and judgment, and wrecking the individual physically, mentally, and morally. Poisons which affect the consciousness, such as alcohol, tobacco, opium, cocaine, tea, and coffee, act first to depress and paralyze the highest faculties, the conscience, the sense of propriety and fitness, respect for the rights of others. Under the influence of alcohol, for example, the adult becomes a child in judgment and emotional excitability, yielding to every impulse, a prey to every emotion. The brakes are removed from the mind, self-control is gone, conventional usages and sanctions are ignored. The drunken man is insane. After many repetitions the condition becomes permanent; degeneracy has resulted from the chronic poisoning, and this condition may be passed on to posterity.

A most striking example of alcoholic degeneracy is afforded by the study of 117 alcoholic families by Prof. Alfred Gordon, of Philadelphia. In 90 of these families there were 200 children, all of whom showed the stigmata of degeneracy; 150, or three-fourths of the whole, were

epileptic. Of 78 children found in 20 families whose parents and grandparents were both alcoholic, 35 were imbeciles and 25 insane.

William McAdam Eccles, M. D., F. R. C. S., testified before the royal commission appointed to study race deterioration in Great Britain that alcohol is a cause of sterility in women. (Par. 10,109.)

Prof. Bunge, the world's most eminent authority in the chemistry of nutrition, has shown by carefully studied statistics that the inability of mothers to nurse their children is one of the hereditary results of alcoholism in fathers.

Recent experiments have shown that a high protein diet (a flesh diet) causes sterility in rats and fowls. An eminent English physician (Dr. Watson, of Edinburgh) has called attention to the fact that the birth rate has decreased in England in proportion as flesh eating has increased.

From every distillery and every saloon, from every tobacco factory and every cigar stand, and from every brothel, there is pouring out a stream of degenerative influences which are more destructive than all others which the human race has encountered during its long history. Man has managed to survive the most terrific terrestrial upheavals and cataclysms; he has fortified himself against climatic changes; he has overcome the monsters of the forest which preyed upon him; and now he is conquering one by one his microscopic enemies, but in spite of all this, his voluntary departure from normal conditions of life, the damages which he voluntarily inflicts upon himself by poison habits and other vices, are slowly but surely destroying his racial stamina, and in the end will certainly accomplish his ruin unless the danger of such wide departures from normal conditions of life is recognized and the evil averted by a return to natural ways of living.

The rapid increase in the proportion of city to country population within the last half century is without doubt a very active factor in modern race degeneracy. The dust and infections of the city, the noise, stress, excesses, and other abnormities, create a degenerate type of man. The city population in England is three times as great in proportion to the whole as 50 years ago. The same may be said of the United States.

In summing up its report the British commission said on this point:

In regard to certain classes in Dublin, Sir L. Ormsby was convinced that there was evidence of progressive deterioration, and Sir Charles Cameron seemed to share the same belief. It is not only that the effect of migration into the towns is to make the next generation of a weaker type, but in Sir L. Ormsby's opinion, the people who come into the towns from the rural districts are of a weaker type to start with and therefore more vulnerable to the noxious influence of urban existence. From the facts that came under his knowledge, the bishop of Ross was likewise of the opinion that there was physical deterioration among the people. (Par. 407.)

That the human race is degenerating is becoming evident to all intelligent students of sociology, and the cause and cure of this deteriorative tendency are being made the subjects of frequent research and discussion. A late number of the British Medical Journal (Oct. 9, 1909) contains a summary of interesting researches recently carried on by Ethel M. Elderton, a Galton research scholar, for the purpose of determining which is the dominant influence in this degenerative tendency, heredity or environment. Miss Elderton's study inclines her to the opinion that heredity is decidedly the most influential factor. She finds that weakly and defective children are the off-

spring of weakly parents and that the deteriorated type of human beings is increasing much more rapidly than the stronger types. These facts were elicited as a result of the study of many thousands of families.

Prof. Carl Pearson, an authority in sociology, recognizes the rapid increase of "unfit" types of human beings.

It can no longer be said that race degeneracy is simply a bugaboo created by pessimists and alarmists. Pessimism is unquestionably a paralyzing force which has no place in a progressive age, but excessive optimism may be equally detrimental to progress. The marvelous discoveries in relation to the causes of disease and the means of prophylaxis which have been made within the last half century, and the great improvement in the average length of life which has been shown as the result of the practical application of these discoveries have led to a feeling of security and satisfaction in relation to the physical well-being of the race which is not justified by the real facts which are revealed by a deeper examination of the question.

Former President Roosevelt has frequently called attention to the danger of race suicide. In an article in the Outlook for April 8 on Race Decadence, Mr. Roosevelt says:

We can say that, if the processes now at work for a generation continue to work in the same manner and at the same rate of increase during the present century, by its end France will not carry the weight in the civilized world that Belgium now does, and the English-speaking peoples will not carry anything like the weight that the Spanish-speaking peoples now do, and the future of the white race will rest in the hands of the German and the Slav.

The fact that the skull of *Pithecanthropus*, the ancient skull from Java, approaches in type the skull of the ape and that the skulls of cave dwellers have similar characteristics have made us complacent in the thought that we are steadily advancing, but the discovery of the skeleton of the Galley Hill man, supposed to be 170,000 years old, gives the question a new aspect. A careful examination shows this ancient skull to possess characteristics identical with those of the modern Englishman.

In his haste to become civilized man has neglected to provide compensations for the departures from normal conditions of life which civilization necessarily involves. We need not return to savagery to be healthy, but we must see that the air we breathe is as clean as that which the savage breathes; that the food we eat is as wholesome and pure as the water we drink. We must give our pale skins more contact with sun and air and must keep the inside of our bodies as clean as the outside. We must cultivate clean blood instead of blue blood. Society must establish laws and sanctions which will check the operation of heredity in the multiplication of the unfit. Eugenics and eugenics must become dominant matters of study and concern. We must cultivate health instead of cultivating disease, as we have been doing for 6,000 years or more, and must rally the moral and social forces of the world to labor earnestly for race regeneration. Thus only may we hope to stay the tide of degeneracy which is rolling in upon us and avert the race extinction which is staring us in the face.